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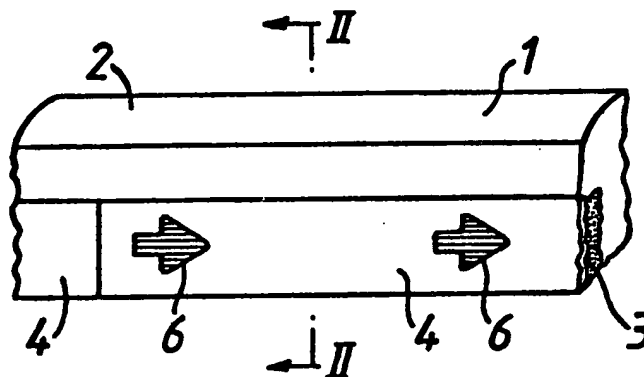
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(58) Field of search
G5C
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(54) Emergency evacuation route display system

(57) An emergency evacuation system displays a visual evacuation route command to an observer during a fire or other emergency and consists of an elongate member such as an adhesive tape, a fluorescent tube or rod or a skirting board, which is fixed to the wall or floor adjacent their junction, and exposed luminous or illuminable direction indicating means displayed by the member. The indication means may consist of arrows which are themselves luminous or are disposed as non-luminous indicia on a luminous background. The system may employ an elongate element in the form of a skirting board length 1 of extruded plastics materials, a channel 3 in the extrusion containing a bundle of optic fibres retained by panels 4 of laminated construction and formed with an outer transparent skin overlying an inner opaque skin formed with a series of cut-outs 6 each of arrow shape and exposing the fibre bundle to view at points along its length. A remote light source illuminates the fibre bundle so that the cut-outs 6 are illuminated to provide a direction indication visible in an emergency situation when reduced visibility may prevail. Alternatively optical fibres may be sandwiched between the two laminae of a laminated tape.

FIG.1



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FIG.1

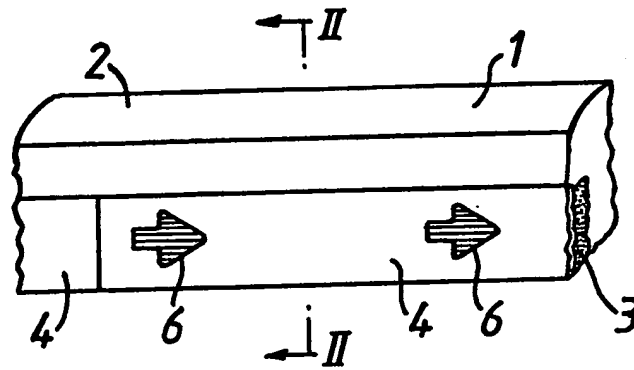
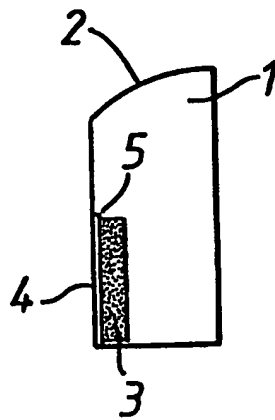


FIG.2



SPECIFICATION

Emergency evacuation system

- 5 The invention relates to an emergency evacuation system for use in buildings in the event of fire or similar emergencies where personnel require direction under panic conditions to an emergency escape exit such as a fire escape.

- 10 Fire escapes are standard in buildings beyond a certain size and are essential in most commercial premises such as offices and hotels as well as in large residential buildings (eg. apartment blocks) and public service
15 building such as hospitals. During a fire, however, panic conditions, smoke, flames and large numbers of people seeking simultaneous exit combine to hinder efficient safe evacuation. A major factor contributing to loss of life
20 under such conditions of the almost universal lack of any means of indicating to building occupants the quickest and safest route to a fire exit. Even those occupants who are aware of the route rely on memory of internal 'land-marks' which are, of course, difficult to recognise under conditions of reduced visibility and possible impaired vision.

- The invention proposes a means by which the above disadvantages are largely overcome
30 in a simple and relatively inexpensive manner which it is believed will in practice save lives in emergency situations. According to the invention, a building evacuation guide element for displaying a visual evacuation route command to an observer during a fire or other
35 emergency comprises an elongate member for fixture to a wall or floor adjacent their junction along a route leading to an emergency escape exit from a building and exposed luminous or
40 illuminable direction indicator means displayed by said member (eg. carried by the member or housed in a cavity thereof).

- The elongate member may take the form of a plastics moulding (eg. a plastics material
45 extrusion), a timber moulding, a metallic or plastics strip panel or an adhesive tape.

- The direction indicator means may comprise luminous indicia in the form of, for example, arrows of various types which are themselves
50 luminous or are disposed as non-luminous indicia on a luminous background. In the case of a tape, for example, black non-luminous arrows may be carried on a luminous surface coloured, for example, green, orange or red.
55 Alternatively, luminous arrow-form indicia may appear on a non-luminous white or clear background. A tape may be multi-coloured (eg. tricoloured) to indicate routes of varying length to a fire exit.

- 60 A plastics moulding may take the form of a length of skirting board having a luminous insert.

- Optical fibres connected to a light source, for example a battery-powered light source
65 normally maintained on charge using mains

- electrical power, may be used as direction indicator means. For example, optical fibres may run the length of an adhesive tape to whose surface they are secured, with means
70 obscuring portions of the length of the tape being provided to provide directional indication. A tape of such form may, for example, carry arrow-shaped means for obscuring the optical fibres so that arrowed non-luminous
75 direction indicator means are in use displayed on the tape surface against a luminous background where the optical fibres are exposed to sight. A laminated tape in which optical fibres are sandwiched between the laminæ is envisaged as a preferred form of tape according to
80 the invention.

- Optical fibre indicator means may be incorporated into the surface of, for example, a plastics moulding or extrusion during manufacture or inserted into a surface recess after
85 manufacture, in each case means being provided to alternate exposed and unexposed areas in a manner which indicates direction. A plastics moulding, for example, may include a plurality of windows in its body, the windows forming a series along the length of the
90 moulding and each being configured to indicate direction. The optical fibres may run, for example in bundle, beneath said windows in a continuous run from a remote light source.
95

- A further form of guide element according to the invention comprises a plastics (or other material) tube or rod displaying arrow indicia on its surface and incorporating a phosphorescent or fluorescent chemical either dispersed
100 in its make-up or as a body (eg. coating) of such materials contained in a cavity defined therein in the case of a tube. The chemical (eg. gaseous) may be a naturally phosphorescent or fluorescent material or alternatively the
105 guide element may include a substance which phosphoresces or fluoresces on stimulation, for example in response to UV-irradiation from a local source propagating towards the guide element. The guide element may be a fluorescent lighting means.
110

- Low voltage sources such as LED's and LCD's may be employed as indicator means in accordance with the invention, the LED's or
115 LCD's taking the form of arrow shapes or being associated with means which expose the devices in such a way as to display arrow shapes (eg. illuminated or non-illuminated arrow shaped areas). Neon or other inert gas illumination may be used in a similar fashion,
120 for example as arrow-form; illumination means received in or otherwise carried by a skirting length (eg. a plastics extrusion).

- Running light displays in which movement
125 in a given direction is simulated by illuminating each of the members of a linear series of light sources in succession by a continuous series of time-delayed energizing pulses which alternate said sources between their binary
130 states may be used as direction indicator

means in accordance with the invention.

Tapes, such as referred to earlier, may, of course, be used in combination with, for example, a plastics extruded or other skirting member.

A preferred guide element according to the invention comprises a plastics extruded skirting body co-extruded with a luminous insert direction indicator.

Included within the scope of the invention is a method of indicating a fire or other emergency escape route in a building which method comprises disposing illuminable or luminous indicator means, preferably proximate to a floor-wall junction, along said route.

The following is a description, by way of example only, of one embodiment of the invention, reference being made to the accompanying drawings in which:-

Figure 1 shows a partially broken away view of a length of plastics extruded skirting board according to the invention; and

Figure 2 is a cross-section taken along the line II-II of Fig. 1.

The skirting board shown in the drawings is a plastics extruded body 1 of a pigmented filled hard surface polymer such as an ABS resin. A curved upper edge 2 is formed for aesthetic reasons and to avoid dust trapping in use.

The extruded body 1 is formed with a channel 3 which extends the length of the extrusion. A bundle of optical fibres is disposed within the channel 3 and is coextensive with its length.

Removable thin plastics material panels 4 close the channel 3 and are received against shoulder 5 of the main extrusion 1 with their inside surfaces abutting the fibre bundle.

Panels 4 locate with the extrusion 1 by means not shown, such means retaining the panel 4 in position against inadvertent dislodgement.

Panels 4 are of laminated construction, an outer transparent skin overlying an inner opaque skin formed with a series of cut-outs 6 (of which two only are shown in Fig. 1) which expose the fibre bundle to view at points along its length.

A remote light source (not shown) supplies light to a terminus of the fibre bundle which transmits the light along the length of the channel 3 so that the portions of the bundle visible through cut-outs 6 are illuminated.

The light source may be arranged to provide continuous illumination during normal conditions and to switch rapidly between illuminated and non-illuminated states under emergency conditions. The light source may be battery-powered with the battery switched between charge (with mains energization) and discharge modes during normal conditions (eg daylight charge and night discharge as the light source is energized to provide low level 'sign post' lighting during hours of darkness).

The invention as described earlier without

reference to the drawings may include any one or more features of the invention as described with reference to the drawings.

Where optical fibres are referred to hereinbefore, for example with reference to the drawings, it is envisaged that the fibres may require termination where light-emission is required. Alternatively, it is believed possible that means may be provided to diffuse light from the circumferential walls of optical fibres either by modification of the walls or by back-reflection of light which would otherwise emit from a fibre-termination.

CLAIMS

1. A building evacuation guide element for displaying a visual evacuation route command to an observer during a fire or other emergency, said element comprising an elongate member for fixture to a wall or floor adjacent their junction along a route leading to an emergency escape exit from a building and exposed luminous or illuminable direction indicator means displayed by said member.

2. An element as claimed in Claim 1 and comprised of an adhesive tape length displaying direction indicator means in the form of arrows which are themselves luminous or are disposed as non-luminous indicia on a luminous background.

3. An element as claimed in Claim 1 and comprised of a plastics material skirting moulding having a luminous or illuminable insert arranged to indicate direction.

4. An element as claimed in Claim 1 and substantially as hereinbefore described.

5. A method of indicating a fire or other emergency escape route in a building which method comprises disposing illuminable or luminous indicator means along said route proximate to a floor-wall junction.

6. A method as claimed in Claim 5 wherein a guide element as claimed in any one of Claims 1 to 4 is disposed along said route proximate to a floor-wall junction.

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